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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,936	03/22/2006	Stipan Katusic	287740US0XPCT	5016
22850	7590	04/30/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER NGUYEN, KHANH TUAN	
			ART UNIT	PAPER NUMBER
			1751	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/30/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/572,936

Applicant(s)

KATUSIC ET AL.

Examiner

Khanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The preliminary amendment filed on 03/22/2006 is entered and acknowledged by the Examiner. Claims 1-8 are currently pending in the instant application.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 03/22/2006, 02/23/2007 and 03/29/2007 has been regarded by Examiner and made of record in the application file.

Drawings

4. The drawings submitted on 03/22/2006 has been regarded by Examiner and made of record in the application file.

Double Patenting

5. Claims 1 and 4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 6 and 10 of copending Application No. 11/039,871. Although the conflicting claims are not identical,

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they are not patentably distinct from each other because the zinc oxide powder is form of aggregates of anisotropic particles having specific aggregates shapes and a BET specific surface area of 10 to 200 m²/g.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

6. Claims 5, 6 and 7 are objected to because of the following informalities: The words “zinc vapour”, “vaporising” and “vaporisation” are misspelled and or misused and should be replace with – zinc vapor –, –vaporizing – and – vaporization –. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 provides for the use of pyrogenically prepared zinc oxide powder, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 8 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition

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of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over as Kogoi et al. (US Pat. 6,335,002 hereinafter, "Kogoi") in view of American Zinc, Lead and Smelting Company (GB Pat. 435,005 hereinafter, "American Zinc").

Regarding claims 1 and 3, Kogoi discloses the gas phase process includes a French process of oxidizing zinc vapor and an American process of oxidizing zinc vapor generated at the smelting process of zinc ore (Col. 1, lines 45-48). In the gas phase process, a zinc oxide powder having a specific surface area of 30 m²/g or more can be obtained (Col. 1, lines 48-50). Kogoi also discloses the zinc oxide powder produced by conventional gas phase process (e.g., French Process and American Process) are non-uniform in shape and particle size (Col. 1, lines 57-58). These zinc oxide powders are readily coagulated to form huge secondary particles (Col. 1, line 48). Kogoi does not disclose the zinc oxide powder having specific coagulates forms.

In the same filed of endeavor, American Zinc discloses a process of manufacturing zinc oxide and more particularly the methods for controlling the shape of the particles (Page 1, lines 11-14). The reference also discloses the zinc oxide particles built up (aggregated) to form acicular shape (i.e., circular or ellipsoidal shape) or needle shape (linear or branch shape) zinc oxide particles depending on the admission of air and the degree of laziness of the flame in the chamber when zinc vapor are slowly mix with each other (Page. 2, lines 98-110).

Therefore, it would have been obvious to one of ordinary skill in the art to have had modified and optimized the process of manufacturing the zinc oxide powders as taught by Kogoi conventional gas phase process of manufacturing zinc oxide powder in view of American Zinc method for controlling the shape of the zinc oxide particles in order to improve in manufacturing of zinc oxide and controlling the shape (i.e., ECD, mean circumference and aggregate surface area) of the particles to obtain the morphologies in the claimed range.

Regarding claim 2, Kogoi does not explicitly disclose the claimed limitations of the pyrogenically prepared zinc oxide powder according to claim 1, characterised in that the tamped density, determined according to DIN ISO 787/11, is at least 150 g/l. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the process as taught by Kogoi would encompass the claimed property because Kogoi discloses similar method steps with similar ingredients for manufacturing the same product. The Examiner further notes that the USPTO is not

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equipped to perform laboratory testings and experimental benchworks to measure the properties of the resulting composition. The burden is on the applicant to prove otherwise.

Regarding claim 5, Kogoi further discloses a process for the preparation of the zinc oxide powder according to claim 1, wherein zinc is carried by inert gas into a vaporizer 2 and the zinc vapor is generated in the vaporizer chamber (col. 5, lines 30-34), a combustible gas such as propane and hydrogen and a steam mixture of oxygen and water vapor are reacted in a flame with an oxygen-containing gas in an oxidation zone (Col. 5, lines 35-43), the hot reaction mixture is cooled by blowing cool air into the hot mixture in the cooler 5 where the solid zinc oxide particles are quench and separated from the reaction (Col. 5, lines 45-47), the zinc oxide particles are collected in the cyclone 6 (See Fig. 1 and Col. 1, lines 30-54).

Regarding claim 6, Kogoi further discloses a process according to claim 5, characterised in that the zinc vapor is obtained in a reductive vaporization zone (vaporizer chamber 2) by vaporizing zinc powder by means of a stream of inert gas in a centrally arranged pipe by means of an externally arranged flame which is generated by reaction of a combustible gas and an oxygen-containing gas (See Fig. 1 and Col. 1, lines 30-34), the combustible gas being present in a stoichiometric excess relative to the oxygen content of the oxygen-containing gas (Col. 5, lines 35-43).

Regarding claim 7, Kogoi further discloses a process wherein raw material zinc fed into a hopper 4 is transferred to a zinc vaporizer 2 by a carrier gas, and the zinc vapor generated in the zinc vaporizer 2 is introduced by an inert gas into a reactor 1 through a first nozzle 7. An oxidizing gas containing oxygen and water vapor is introduced into the gas heater 9, and the heated gas is introduced into the reactor 1 through a second nozzle 10 and/or an oxidizing gas obtained by the combustion of a flammable gas such as propane or hydrogen with an excess combustion supporting gas such as oxygen or air occurred in a combustion chamber 3 is introduced into the reactor 1 through a third nozzle 8, whereby zinc is oxidized (see, for example, FIGS. 2(a) to 2(c)). The reaction is stopped by a cooling process (quenching process), whereby cooling air is blown into the zinc oxide particles, the particles are transferred to a cooler 5 and thereby the reaction is stopped. Thereafter, zinc oxide is collected by a collecting means 6 such as a bag filter or cyclone, and used as a product (See Fig. 1 and 2, and Col. 5, lines 30-54).

In general, the transposition of process steps or the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the processes, see *Ex parte Rubin*, 128 USPQ 159 (PO BdPatApp 1959).

Regarding claim 8, Kogoi further discloses the method of using the pyrogenically prepared zinc oxide powder according to claim 1, as a constituent of sun protection compositions for protection against UV radiation (UV shielding) (Col. 1, lines 22).

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over as Kogoi et al. (US Pat. 6,335,002) in view of American Zinc, Lead and Smelting Company (GB Pat. 435,005) and further in view of Kim et al. (US Pat. 4,394,488 hereinafter, "Kim") and Myerson et al. (US Pat. 5,849,063 hereinafter, "Myerson").

Kogoi and American Zinc are relied upon set forth above. With respect to instant claim 4, Kogoi and American Zinc do not disclose the purity of zinc oxide powder or the impurities in the manufacturing process.

However, Kim discloses the American Process and French Process may product high purity zinc oxide (Col. 2, lines 15-18). These conventional gas phase methods are capable of producing zinc oxide of at least 99.9 weight percent pure (Col. 2, line 13). The impurities that are form during manufacturing are less than 0.1 weight percent (Col. 2, line 14).

In addition, Myerson discloses most zinc oxide are product by French Process today involves controlled burning of zinc metal vapor in air to obtained zinc oxide having exceptional chemical purity (Col. 11, lines 1-3). The prior art also discloses the zinc oxide purity can be control by controlling the manner in which the zinc oxide precipitates out of the intermediate during the zinc oxide crystallization step, it is possible to control the particle size hence the surface area of the zinc oxide produced as well as the purity (Col. 12, lines 35-39).

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Therefore, it would have been obvious to one of ordinary skill in the art to have had optimized the purity of zinc oxide powder during manufacturing, as taught by Kogoi in view of American Zinc and further in view of Kim and Myerson, in order to provide a high purity zinc oxide by controlling the manner in which the zinc oxide crystallize.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh T. Nguyen whose telephone number is (571) 272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KTN
Examiner
04/16/2007



Mark Kupoc

Primary Examiner

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